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EXAMINER	
SPAR, ILANA L	

ART UNIT	PAPER NUMBER
2629	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/598,202	ZHOU ET AL.	
	Examiner	Art Unit	
	ILANA SPAR	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 August 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-22 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-20 of copending Application No. 10/579,308. Although the conflicting claims are not identical, they are not patentably distinct from each other because each claims an electrophoretic display which applies two signals to the display: one which provides image information, and one which prevents the image information from being retained on the display. Claim 1 of the current application teaches the limitation of a second signal which decreases the ability of particles to respond to the first signal, while claim 1 of the copending application teaches the limitation of a second signal which draws particles away from

the locations assigned during the application of the first signal, and back toward the middle of the display cell region. It is clear that the second signals of both claimed inventions carry out the same function of preventing the electrophoretic particles from maintaining the positions assigned by the first signal.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

3. Claims 1-22 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-22 of copending Application No. 10/579,307. Although the conflicting claims are not identical, they are not patentably distinct from each other because each claims an electrophoretic display which applies two signals to the display: one which provides image information, and one which prevents the image information from being retained on the display. Claim 1 of the current application teaches the limitation of a second signal which decreases the ability of particles to respond to the first signal, while claim 1 of the copending application teaches the limitation of a second signal which applies a uniform electric field to the entire display. It is clear that the second signals of both claimed inventions carry out the same function of preventing the electrophoretic particles from maintaining the positions assigned by the first signal.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

4. Claims 1-22 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-23 of

copending Application No. 10/579,303. Although the conflicting claims are not identical, they are not patentably distinct from each other because each claims an electrophoretic display which applies two signals to the display: one which provides image information, and one which prevents the image information from being retained on the display. Claim 1 of the current application teaches the limitation of a second signal which decreases the ability of particles to respond to the first signal, while claim 1 of the copending application teaches the limitation of a second signal which causes the electrophoretic particles to move from the locations assigned by the first signal back to a location near the middle of the display cell region. It is clear that the second signals of both claimed inventions carry out the same function of preventing the electrophoretic particles from maintaining the positions assigned by the first signal.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3, 7-14, and 18-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Bert et al. (T. Bert et al. 14-1: Passive Matrix Addressing of Electrophoretic Image Display. *Eurodisplay*, 2002, 251-254.).

With reference to claim 1, Bert et al. teaches an electrophoretic display device (1) comprising:

an electrophoretic medium comprising charged particles (see page 253, column 2, lines 8-16);

a plurality of picture elements (see page 253, column 2, lines 8-16);

electrodes associated with each picture element and arranged to receive drive signals (see page 253, column 2, lines 8-16); and

drive means arranged to control the drive signals supplied to the electrodes, which drive signals are provided to create a potential difference across each picture element to bring the particles into a position corresponding to image information to be displayed (see page 253, column 2, lines 8-16), the display device being characterized in that:

said drive means is further arranged to apply a second electric signal to the electrodes, which second electric signal decreases the ability of said particles to respond to the drive signal (see page 253, column 1, lines 6-18).

With reference to claim 2, Bert et al. teaches all that is required with reference to claim 1, and further teaches that the energy of the second electric signal is controlled by the drive means such that said second signal does not drive the particles into an extreme position near the electrodes (see page 253, column 1, lines 11-18).

With reference to claim 3, Bert et al. teaches all that is required with reference to claim 1, and further teaches that the second electric signal is superimposed on the drive signal (see page 253, column 1, lines 44-49).

With reference to claim 7, Bert et al. teaches all that is required with reference to claim 1, and further teaches that the second electric signal is applied at the end of the duration of the drive signal (see page 253, column 1, lines 54-55).

With reference to claim 8, Bert et al. teaches all that is required with reference to claim 1, and further teaches that the second electric signal comprises a sequence of pulses, in which sequence the polarity of the pulses is alternating (see Figure 2).

With reference to claim 9, Bert et al. teaches all that is required with reference to claim 8, and further teaches that the energy of a pulse in the sequence is essentially equal to the energy of any other pulse in said sequence (see Figure 2).

With reference to claim 10, Bert et al. teaches all that is required with reference to claim 8, and further teaches that the amplitude of the pulses decreases with time (see Figure 2, 'voltage across pixel (6,4) (black)').

With reference to claim 11, Bert et al. teaches all that is required with reference to claim 8, and further teaches that the drive means removes any direct current component from the second electric signal before applying it to the electrodes (see page 253, column 1, lines 54-55).

With reference to claim 12, Bert et al. teaches a method of controlling gray level transitions in an electrophoretic display device, the method comprising the steps of:

supplying a drive signal to display device electrodes associated with each picture element of the display device (see page 253, column 2, lines 8-16);

controlling the drive signal supplied to the display device electrodes such that the drive signal provided to each picture element creates a potential difference across said

picture element to bring charged particles of the display device into a position corresponding to image information to be displayed (see page 253, column 2, lines 8-16), the method being characterized in that it comprises the step of:

applying a second electric signal to the display device electrodes, which second electric signal decreases the ability of said particles to respond to the drive signal (see page 253, column 1, lines 6-18).

With reference to claim 13, Bert et al. teaches all that is required with reference to claim 12, and further teaches comprising the step of:

controlling the energy of the second electric signal such that said second signal does not drive the particles into an extreme position near the display device electrodes (see page 253, column 1, lines 11-18).

With reference to claim 14, Bert et al. teaches all that is required with reference to claim 12, and further teaches comprising the step of:

superimposing the second electric signal on the drive signal (see page 253, column 1, lines 44-49).

With reference to claim 18, Bert et al. teaches all that is required with reference to claim 12, and further teaches that the second electric signal is applied at the end of the duration of the drive signal (see page 253, column 1, lines 54-55).

With reference to claim 19, Bert et al. teaches all that is required with reference to claim 12, and further teaches that the second electric signal comprises a sequence of pulses, in which sequence the polarity of the pulses is alternating (see Figure 2).

With reference to claim 20, Bert et al. teaches all that is required with reference to claim 19, and further teaches that the energy of a pulse in the sequence is essentially equal to the energy of any other pulse in said sequence (see Figure 2).

With reference to claim 21, Bert et al. teaches all that is required with reference to claim 19, and further teaches that the amplitude of the pulses decreases with time (see Figure 2, 'voltage across pixel (6,4) (black)').

With reference to claim 22, Bert et al. teaches all that is required with reference to claim 19, and further teaches comprising the step of:

removing any direct current component from the second electric signal before applying it to the display device electrodes (see page 253, column 1, lines 54-55).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 4-6 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bert et al. in view of Fujita (Great Britain Published Patent Application 2,175,725).

With reference to claim 4, Bert et al. teaches all that is required with reference to claim 1, but fails to teach that the polarity of the superimposed signal remains the same.

Fujita teaches that the superimposed signal is arranged such that its polarity remains the same for the complete duration of the second electric signal (see page 3, lines 72-77 and Figure 2).

It would have been obvious to one of ordinary skill in the art at the time of invention that, depending on the voltages of the two individual signals, when the signals are combined and displayed at the same time (superimposed), that the polarity might be changed such that it remains constant for the duration of the superimposition.

With reference to claim 5, Bert et al. teaches all that is required with reference to claim 1, but fails to teach that the drive signal is distributed around the second electrical signal.

Fujita teaches that the drive signal is distributed around the second electrical signal (see Figure 2, response signal and reverse response signal).

It would have been obvious to one of ordinary skill in the art at the time of invention that it may be advantageous for both the first and second signals to be displayed concurrently, with the first signal is distributed around the shorter second signal, such that image burn-in may be prevented.

With reference to claim 6, Bert et al. teaches all that is required with reference to claim 1, but fails to teach that the second electrical signal is applied during the second half of the duration of the drive signal.

Fujita teaches that the second electrical signal is applied during the second half of the duration of the drive signal (see Figure 2, response signal and reverse response signal).

It would have been obvious to one of ordinary skill in the art at the time of invention that the second signal should not be applied at the start of the first signal, to allow time for the display to display the image data, but that in order to prevent image burn-in, that it be applied before the first signal has remained on the display for its entire duration.

With reference to claim 15, Bert et al. teaches all that is required with reference to claim 12, but fails to teach that the polarity of the superimposed signal remains the same.

Fujita teaches that the superimposed signal is arranged such that its polarity remains the same for the complete duration of the second electric signal (see page 3, lines 72-77 and Figure 2).

It would have been obvious to one of ordinary skill in the art at the time of invention that, depending on the voltages of the two individual signals, when the signals are combined and displayed at the same time (superimposed), that the polarity might be changed such that it remains constant for the duration of the superimposition.

With reference to claim 16, Bert et al. teaches all that is required with reference to claim 12, but fails to teach the step of distributing the drive signal around the second electrical signal.

Fujita teaches distributing the drive signal around the second electrical signal (see Figure 2, response signal and reverse response signal).

It would have been obvious to one of ordinary skill in the art at the time of invention that it may be advantageous for both the first and second signals to be displayed concurrently, with the first signal is distributed around the shorter second signal, such that image burn-in may be prevented.

With reference to claim 17, Bert et al. teaches all that is required with reference to claim 12, but fails to teach that the second electrical signal is applied during the second half of the duration of the drive signal.

Fujita teaches that the second electrical signal is applied during the second half of the duration of the drive signal (see Figure 2, response signal and reverse response signal).

It would have been obvious to one of ordinary skill in the art at the time of invention that the second signal should not be applied at the start of the first signal, to allow time for the display to display the image data, but that in order to prevent image burn-in, that it be applied before the first signal has remained on the display for its entire duration.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ILANA SPAR whose telephone number is (571)270-7537. The examiner can normally be reached on Monday-Thursday 8:00-4:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571)272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bipin Shalwala/
Supervisory Patent Examiner, Art Unit 2629

ILS